

1 (Pause.)

2 MR. DYGERT: Should we move on while you
3 all caucus?

4 MR. EDWARDS: Just a second.

5 DR. COLLINS: Mr. Dygert?

6 MR. DYGERT: Hold on just a minute,
7 please.

8 MR. EDWARDS: I think again because of the
9 different levels of negotiations among the parties,
10 it's not in the language. There may be reasons for
11 that, but it's not in the proposed AT&T language.

12 MR. DYGERT: Do we know if it's in the
13 proposed Cox language?

14 MR. HARRINGTON: According to the JDPL,
15 it's not.

16 MR. EDWARDS: Then I presume it's not.

17 DR. COLLINS: That's the point I was going
18 to make.

19 MR. DYGERT: Thank you.

20 MR. GOYAL: I have just a couple of quick
21 follow-ups on that issue.

22 I would like to ask the Verizon witnesses,

1 was the 240 total tandem trunk cap, was there
2 language reflecting that proposed to any of the
3 petitioners at the start of this arbitration?

4 MR. EDWARDS: That language I think was in
5 the origin filed contract language with WorldCom.

6 MS. KELLEY: If I could, we have
7 everything upstairs. It might be useful--we could
8 actually find out the answer and let you know, but
9 we could do that at lunch.

10 MR. GOYAL: That would be helpful.

11 MR. STANLEY: I have a couple of questions
12 for the Verizon witnesses.

13 How many--this is also about tandem
14 exhaustion. How many Verizon tandems are expected
15 to exhaust in the next four years or six years? Do
16 you have figures on that?

17 MR. ALBERT: I could give you a rough
18 estimate.

19 MR. STANLEY: Just in Virginia, Verizon
20 tandems in Virginia.

21 MR. ALBERT: There was one interrogatory
22 answer, and most immediately it was Arlington in

1 the Wash Met area, it's the Turner Road tandem in
2 the Richmond area. It's the Luck Avenue tandem in
3 the Roanoke area, and it's the Bute Street tandem
4 in the Norfolk area.

5 Of those, I think the--I think Luck Avenue
6 was 2003, and I think the other three tandems were
7 2001.

8 MR. STANLEY: If the proposed 200,000
9 minutes of use language were adopted, would that
10 obviate the need to exhaust any of those tandems?

11 MR. ALBERT: Yeah. Let me finish the rest
12 of the time frame question, too, because we
13 answered more immediately in the interrogatory.

14 If you're looking out six years and if
15 you're saying it could be 54, 55, something in that
16 time frame, we project that the Fredericksburg
17 tandem and the Leesburg tandem and the Lynchburg
18 tandem would exhaust in those time frames.

19 Your question on what would the contract
20 provision impact, it would affect the Luck Avenue
21 and obviously Leesburg, Fredericksburg, and
22 Lynchburg. The others were too far gone and were

1 already in the implementation stage to put
2 additional tandems into those LATAs.

3 MR. STANLEY: For those that you mentioned
4 that it would impact, would that delay their
5 exhaustion, or would it eliminate the need to
6 exhaust them?

7 MR. ALBERT: I guess you would have to say
8 delay, but it could be significantly delayed. I
9 mean, is 10 years eliminate or is 10 years a delay?
10 It would push them out.

11 MR. STANLEY: Are there any pairs of
12 Verizon end offices that pass more than 200,000
13 minutes between them through a tandem?

14 MR. ALBERT: Not that I'm aware of. I
15 mean, we use that as a threshold ourselves within
16 our network to make the decision of one would put
17 in end office trunking. And so far as I know,
18 everything out there where we've got end office
19 trunking, which is extensive, I'm not aware of
20 anything that violates that.

21 MR. STANLEY: So, the 200,000 minutes is
22 also an internal threshold that Verizon uses to

1 determine when to direct trunk between end offices?

2 MR. ALBERT: That's correct, and it's one
3 that we've basically used since the late eighties.
4 And there were studies that used to be done,
5 economical tradeoffs. The first one I remember
6 seeing, we had a breakpoint of about 22 trunks.
7 Over time that was reduced.

8 The last time a study was done, which was
9 the early nineties, the breakpoint had come down to
10 12 trunks. Obviously, now that we are doing DS1s,
11 the building block is larger than both of those, so
12 we routinely just used that as our engineering
13 design approach for that amount of time in the late
14 eighties is when it started.

15 MR. STANLEY: Okay. Thank you.

16 MR. GOYAL: I would like to ask a question
17 of all three petitioners. Is it your understanding
18 that as CLEC traffic volumes grow to a particular
19 end office, the incentive to establish direct end
20 office trunking increases with respect to that end
21 office?

22 MR. TALBOTT: Undoubtedly it does. I

1 think the issue between AT&T and Verizon is should
2 that be Verizon's choice or should that be AT&T's
3 choice on whether it's to be efficient or
4 inefficient for AT&T to do so.

5 MR. GOYAL: I think this is sort of a
6 setup question for this purpose of yes-or-no answer
7 would suffice, and I appreciate the brevity of
8 Mr. Talbott's answer. Do any of the other CLECs
9 want to add anything to that?

10 MR. GRIECO: Yes.

11 MR. BALL: Yes.

12 MR. GOYAL: Is there a crossover point at
13 which it becomes economical for a CLEC to establish
14 direct end office trunking in terms of a traffic
15 volume? Mr. Collins?

16 DR. COLLINS: Yes. The answer is
17 Mr. Albert mentioned that the building block for
18 his own network, and he implied or said that that
19 is--the measure they use is DS1, which is 24
20 channels. In response to one of Cox's
21 interrogatories, we found out that that is not a
22 guideline, a Verizon guideline, but apparently

1 something they use without it being a formal
2 guideline. We had no argument with Mr. Albert
3 representing it that way.

4 But what we have to acknowledge is that in
5 a broadband network such as that employed by new
6 carriers, new CLECs, the basic increment is not a
7 DS1, but is 28 DS1s, DS3; that is a building block,
8 one of the basic building blocks. So we had this
9 tension between 1970, 1980 choices of a DS1, 24
10 channels, because that's what was available then,
11 and it's been carried into the future, and that has
12 a tendency to be in tension with the parameters of
13 a broadband network which lies above the Verizon
14 network, but which is a DS3, which is 672 channels.

15 So, when Cox would build a facility into
16 one of the end offices, we would consider that as a
17 basic building block.

18 What Cox has done is instead of taking 28
19 DS1s, which represent the 672 channels, Cox is
20 willing to use three.

21 Now, we know there is a 240 trunk
22 limitation for WorldCom that has been asked of them

1 by Verizon. That's 10 DS1s, so--and that turns out
2 to be an economic breakpoint, if you would, out of
3 a DS3.

4 So, Cox would much prefer 10 DS1s to be
5 offloaded, which would be equivalent--that is to
6 each central office--which would be equivalent to
7 the 240 trunks connected to the tandem. But we, in
8 the interests of trying to move things forward,
9 agreed to come all the way down to three.

10 MR. GOYAL: I would like to ask one
11 clarification question to Cox and go back to my
12 original question with respect to AT&T and
13 WorldCom.

14 Absent a requirement in the contract
15 language that Cox establish direct end office
16 interconnection when a particular traffic threshold
17 of that end office has been reached, when would Cox
18 establish direct end office interconnection, at
19 what threshold, whether over Cox-built facilities
20 over meet point interconnection or using UNE
21 transport, dedicated transport?

22 DR. COLLINS: There are two parameters

1 that control that. The first is whether or not the
2 tandem is introducing blocking, and Cox has had a
3 number of situations where that's the case; so
4 we've had to put in end office trunks just to avoid
5 blocking, even though there's minimal traffic on
6 them. So, that is one case where Cox would make
7 that choice.

8 The second choice would be made when it
9 was economically feasible to do so because then you
10 pay end office termination charges as opposed to
11 tandem termination charges, so that's where the
12 cost, the money differential is.

13 And Cox would probably use the 10 DS1
14 figure as a point in which to put direct channels
15 into the end offices.

16 MR. GOYAL: Has Cox performed any economic
17 modeling to afternoon at that 10 DS1 figure?

18 DR. COLLINS: I wouldn't say it's economic
19 modeling, but it's an engineering rule of thumb.

20 MS. FARROBA: Just a second. On the
21 blocking, you mentioned based on blocking standards
22 you would make a decision. Are you using the same

1 blocking standards, the BO1 blocking standards that
2 Verizon uses?

3 DR. COLLINS: The blocking I'm talking
4 about is Verizon's tandem blocking access from Cox
5 calls to Verizon customers and vice versa. Cox
6 does use a B.O1 standard which is the same as
7 Verizon's for its outgoing trunks and monitors that
8 consistently and regularly to make sure that that's
9 in place. We don't have problems with our trunks
10 are. We have problems getting through the tandems
11 and vice versa.

12 MR. GOYAL: If I could go through the same
13 questions with respect to WorldCom and AT&T.

14 Is there a traffic threshold to a
15 particular end office where WorldCom and then where
16 AT&T would establish direct end office trunking,
17 whether through the CLEC's own facilities, through
18 UNE transport, or meet point arrangement, what
19 would that threshold be, and how did you arrive at
20 that threshold, if any? Let's start with WorldCom.

21 MR. GRIECO: Well, I believe as far as the
22 200,000 minutes per month issue for the T-1 goes,

1 we have no issue with that. As a matter of fact, I
2 think we proposed that language in our contract
3 with them. The issue for us is with the arbitrary
4 240 trunk tandem issue.

5 So, I think we are in agreement on the DS1
6 to the end office scenario.

7 MR. GOYAL: Okay. And AT&T?

8 MR. TALBOTT: I disagree with both the
9 other petitioners. Number one, WorldCom is using a
10 mid-span fiber meet, and that may provide it--other
11 efficiencies under that architecture, whereas we
12 found mid-span fiber meets to be wholly inadequate
13 because we couldn't get Verizon to cooperate to put
14 them in timely. So we are forced to lease
15 facilities or build facilities. I agree with
16 Dr. Collins that DS3 is the basic building block of
17 a CLEC network. If not higher, up to the next
18 building block, which would be SONET OC48.

19 So, AT&T typically would not want to be
20 required to interconnect at lower than the economic
21 break point for a DS3. The economic breakpoint for
22 a DS3 varies. 10 is you're in the right range, but

1 it could be as high as 14.

2 Now, AT&T would look at what other needs
3 it would have for that facility to that particular
4 end office, if we had UNE-L customers we forecast
5 into that office, we could load that into our
6 equation as to whether it meets our economic
7 breakpoint.

8 And distance also has a factor into it.

9 So, what AT&T is suggesting is that, yes,
10 we do direct end office trunk. If you look at the
11 cost study AT&T submitted, it listed the number of
12 trunks we have currently to end offices and to
13 tandems, and I believe that we are over 50 percent
14 direct end office trunk today.

15 So, it means we are being reasonable and
16 rational in our engineering decisions; but what we
17 can't have is artificial constraints that require
18 us to put in facilities on uneconomic basis. Then
19 our customers have to bear those additional costs.

20 MR. GOYAL: I have a follow-up question
21 for Verizon. Would adoption of the Cox-proposed
22 3DS1 limit, would that delay the exhaust of the few

1 tandems that you mentioned in Verizon's Virginia
2 territory?

3 MR. ALBERT: It wouldn't have that much
4 impact on it. I mean, obviously it would delay it
5 some as opposed to having nothing, but the
6 incremental difference from going from a threshold
7 of one DS1 to two DS1s or two DS1s to three DS1s,
8 there is a pretty giant impact effect with both of
9 those because we are talking about a threshold that
10 gets applied to a large number of subtending end
11 offices around the tandem. When you multiply the
12 conditions where this would kick in for a large
13 number of carriers multiplied times a large number
14 of end offices, that resulting impact then has a
15 big volume effect of the trunks required on the
16 tandem.

17 So, it would move it out some, but at
18 three DS1s we've still got a big problem in terms
19 of the rapid exhaust.

20 MR. STANLEY: Have you quantified this?
21 Have you--

22 MR. ALBERT: No. I've talked with the

1 director that works for the same boss that I do
2 that is responsible for trunk engineering; I've
3 talked to them specifically about Virginia relative
4 to that, and that's his opinion. And from what I
5 know from having had that job prior to him a few
6 years ago, I believe that makes sense.

7 MR. STANLEY: And just now you mentioned,
8 you said when you multiply this across a large
9 number of carriers, in your answer that this would
10 have a huge impact, I think you said--does that
11 assume that all carriers would have this three DS1
12 threshold?

13 MR. ALBERT: In all the Interconnection
14 Agreements that we are currently negotiating as
15 well as new ones that come out, we are trying to
16 negotiate this condition in all of the CLEC and all
17 the wireless agreements.

18 MR. STANLEY: Okay.

19 MR. GOYAL: I would like to ask Verizon
20 its understanding of what portion of its facilities
21 costs it recovers in the form of a UNE transport
22 and UNE switching charges when it expands its

1 tandem switching or transport facilities. Did that
2 question not make sense?

3 MR. ALBERT: I didn't quite understand it.

4 MR. GOYAL: To put the question another
5 way, when Verizon expands its tandem switching and
6 transport facilities, it incurs certain costs of
7 doing so; correct? By adding an additional tandem
8 switch?

9 MR. ALBERT: By putting a new tandem in,
10 that's correct.

11 MR. GOYAL: Or line cards or new trunks;
12 is that correct?

13 MR. ALBERT: Yes. I think in our
14 testimony we said like the average new tandem we
15 collect 10 million bucks for the last few we've
16 done.

17 MR. GOYAL: What portion of its
18 facilities' augmentation cost does Verizon feel
19 it's not recovering from UNE transport, UNE
20 switching charges, or from reciprocal compensation?

21 MR. ALBERT: I don't know.

22 MR. GOYAL: Is there any portion?

1 MR. ALBERT: Not being a cost person, I
2 really couldn't answer that one for you.

3 MR. GOYAL: Okay. Could you explain a
4 little bit about the facilities that would need to
5 be deployed in order to expand tandem switching and
6 tandem transport capability? How is that done?

7 MR. ALBERT: Basically, what we do is
8 you're putting a new tandem switch into the
9 network. You need the basic building blocks. You
10 would need new central office space to locate the
11 switch. You would have to cost for the switch
12 itself. You would have the cost for the power
13 equipment that would go with it. You would have
14 the adjunct cross-connect equipment for the
15 facilities, the interoffice facilities that would
16 originate and would terminate off of a tandem
17 switch.

18 And then the other major component is
19 really the rearrangement of all the existing trunks
20 basically taking half or some portion of those and
21 moving them then over to the new switch.

22 When we're talking about the costs that

1 are incurred, it's important to remember that this
2 is a problem and a pain for the industry. It's
3 true every tandem trunk Verizon is on one end of
4 it, but all other carriers also have their trunks
5 to the tandems.

6 So, when we cut them a new tandem, they're
7 not only rearrangement costs that we incur a chunk
8 of for every single trunk, but all other carriers
9 do too, all the big ones and all the little ones.
10 So, when we have a new tandem, it's really the
11 costs of impacts affect the industry. They affect
12 all carriers big and little, they affect CLECs,
13 they affect wireless. All of those costs to do the
14 network rearrangements to take close to half of the
15 trunks off of the current one, and swing them to
16 the additional new that's going in, those
17 rearrangement expense dollars both parties incur or
18 encountered as well as the equipment types of costs
19 that I described for the switching and for the
20 power in the building, and then the SONET,
21 interoffice transport systems that you would have
22 to build to get to a new tandem which would

1 typically be deployed in a new location.

2 So, there is fix loaded costs, cash out of
3 pocket for Verizon, but then every other single
4 carrier too has to incur those, and then the
5 rearrangements and the expense dollars to actually
6 rehone the trunks that are incurred by all carriers
7 as well as Verizon.

8 MR. GOYAL: Thank you.

9 MR. STANLEY: I have one more question on
10 issue I-4.

11 To the extent Verizon performs forecasting
12 and network trunk rearrangements with interexchange
13 carriers, why is this type of forecasting in
14 network rearrangements, why wouldn't this work with
15 in the area of tandem exhaust, particularly under
16 Verizon's proposed forecasting provisions for
17 tandems?

18 MR. ALBERT: Why wouldn't what work?

19 MS. FARROBA: Why would you need all the
20 other requirements, such as the 240 cap on trunks,
21 et cetera if you--I mean, it's my understanding you
22 do rearrangements with interchange carriers all the

1 time, and you have forecasting, and it's done on an
2 individual basis, and why isn't that a sufficient
3 process or procedure in dealing with CLECs as far
4 as addressing tandem exhaustion?

5 MR. ALBERT: Because, one, not all
6 interexchange carriers forecast. I mean, some do.
7 I would say it's less than half of them that do.

8 I guess maybe I'm not quite understanding
9 the question.

10 MS. FARROBA: Okay. Do you use
11 forecasting and trunk rearrangement or trunk
12 augmentations to end offices to alleviate your
13 tandem exhaust situation currently? Are those
14 procedures that you use currently?

15 MR. ALBERT: In the Interconnection
16 Agreements where we've had people voluntarily agree
17 to it, yes.

18 MS. FARROBA: So, that's a procedure that
19 Verizon uses; is that correct?

20 MR. ALBERT: Yes.

21 MS. FARROBA: Why isn't that sufficient to
22 address tandem exhaust? Why do you need to impose

1 caps on particular individual carriers for the
2 number of trunks that they could have directly at
3 the tandem?

4 MR. ALBERT: Are you asking why do you
5 need the 240 cap in addition to the DS1 threshold?

6 MS. FARROBA: Yes.

7 MR. ALBERT: That is a bit of belts and
8 suspenders, to be quite honest with you, because
9 although the two do different things, they're also
10 closely related, but they both also accomplish the
11 same point, which is to keep under control in an
12 efficient and economical fashion the usage and the
13 design of the trunking on the tandems.

14 MS. FARROBA: Right. But why do you need
15 those if you have accurate forecasting and trunk
16 rearrangement procedures in place already?

17 MR. ALBERT: Why do we need both as
18 opposed to why do we need just one?

19 MS. FARROBA: No. My question was:
20 Currently, I'm assuming currently you don't have
21 these caps in place, the 240 trunk limit and the
22 end office requirement on DS1.

1 MR. ALBERT: We've got 11 Interconnection
2 Agreements in Virginia where carriers have
3 voluntarily agreed to that.

4 MS. FARROBA: Okay. But the vast majority
5 of Interconnection Agreements you have currently in
6 Virginia do not contain those provisions; is that
7 correct?

8 MR. ALBERT: That's correct.

9 MS. FARROBA: Okay. So, currently in
10 Virginia, the way you address tandem exhaust is
11 through--correct me if I'm wrong--through
12 forecasting and negotiating trunk rearrangements to
13 directly to end offices; is that correct?

14 MR. ALBERT: Well, I would say the problem
15 we currently have in Virginia is that we really
16 don't have a way to deal with tandem exhaust
17 because we are just over the last year or so,
18 trying to begin to negotiate Interconnection
19 Agreements with the thresholds and the 240.

20 MS. FARROBA: Okay. Then let me try to
21 ask this a different way.

22 Do you forecast on trunk expansion in

1 Virginia or do you just wait until--the tandem
2 capacity in Virginia at all today? Do you use
3 forecasting.

4 MR. ALBERT: Yeah. We will take forecasts
5 from the CLECs as well as we will take the
6 forecasts that we voluntarily get from some
7 interexchange carriers. We will combine that, we
8 will use those as inputs to combine that with other
9 macro information that we do of our own for trunk
10 forecast.

11 And the end result is we will create a
12 geographic trunk forecast for an area and we'll use
13 that then for our planning and our engineering
14 purposes for the tandems in the end offices for
15 that particular area.

16 MS. FARROBA: Right. And then do you work
17 with carriers to do trunk rearrangements directly
18 to end offices based on those forecasts?

19 MR. ALBERT: We attempt to. So, ones that
20 are willing to voluntarily work with us on that we
21 do. A few are and some aren't.

22 MS. FARROBA: So, I guess this is a

1 hypothetical, then. If the forecasting process
2 worked so you could forecast accurately and you got
3 decent forecasts from CLECs, and then you had
4 cooperation from the CLECs and the trunk
5 rearrangements to the end offices, would that be
6 sufficient in addressing the tandem exhaust
7 situation in Virginia?

8 MR. ALBERT: When you say we had carriers
9 working with us to do trunk rearrangements, if
10 those trunk rearrangements were done at the DS1
11 threshold, if that was used as the engineering
12 design point for when you would then stop adding
13 additional trunks between those pairs, you would
14 stop at that point, add any additional trunks to
15 the tandem, and you begin to add a group and build
16 up to the end offices.

17 If we had just that, I think that would
18 get us 95 percent of the way home to helping with
19 the tandem problems that we've currently got.

20 MS. FARROBA: Just a short response
21 please.

22 MR. TALBOTT: The DS1 threshold is

1 harmful. The 240 trunk cap is extremely harmful,
2 and the reason is because, as was explained by the
3 Verizon witness yesterday--

4 MS. FARROBA: Well, let me just break in
5 for a minute. Could you just respond directly to
6 the question I have, which is whether accurate
7 forecasting and cooperative trunk rearrangements to
8 end offices would resolve the tandem exhaust
9 situation in Virginia.

10 MR. TALBOTT: It should make it more
11 predictable and allow Verizon to stay ahead of the
12 curve and have sufficient trunking and tandem
13 switching capacity in place for all carriers.

14 MS. FARROBA: Thanks. Did anyone else
15 want to respond directly to that question?

16 DR. COLLINS: Cox agrees with AT&T.

17 MS. FARROBA: Thank you.

18 MR. GRIECO: We will as well.

19 MR. STANLEY: A question for Verizon. Do
20 you know what the maximum number of Verizon central
21 offices supported--that support Verizon tandem in
22 Virginia is? So, for example, what's the most

1 number of Verizon's central offices that subtend
2 Verizon tandems?

3 MR. ALBERT: Do you want me to guess or do
4 you want me to check during lunch? Ballpark?

5 MR. STANLEY: How about a ballpark and
6 then maybe if you could follow up with a specific
7 number.

8 MR. ALBERT: I would say 40.

9 MR. STANLEY: If you could follow up with
10 a specific number. I was just looking for the
11 maximum number of central offices that subtend
12 Verizon tandem in Virginia. Thanks.

13 MR. DYGERT: All right. Lunchtime.

14 (Whereupon, at 12:40 p.m., the hearing
15 was adjourned until 1:40 p.m., the same day.)

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1 AFTERNOON SESSION

2 MR. DYGERT: Okay, if we could get started
3 again. The parties during lunch came up with a
4 scheduling proposal that I will try to recap
5 briefly here as we start out, and then we will get
6 back into the cross-examination.

7 Basically, the problem has arisen because
8 Mr. Albert has to leave today at 5:00; and we,
9 therefore, are going to--and he needs to be
10 involved in the cross-examination of the remaining
11 network architecture subpanels, so what we are
12 planning on doing, and jump in here, folks, if I
13 get this wrong, what we are planning on doing is
14 completing staff cross-examination on subpanel one,
15 then moving to issue I-7, which is on subpanel
16 three, so we can complete Cox's network
17 architecture issues, and then probably move
18 directly on to intercarrier compensation, with the
19 understanding that we will resume at some point
20 next week--right, sorry, I knew I would get it
21 wrong. I-7 and then the WorldCom network
22 architecture issues which are...

1 MS. KELLEY: IV-11, IV-34 and IV-37.

2 MR. DYGERT: Right, and then move to
3 intercarrier compensation with the plan to resume
4 the network architecture panel again next week when
5 it's convenient for everyone.

6 So, thanks very much for working that out
7 and guiding me through it, and--Praveen.

8 MR. GOYAL: I would like to move to issue
9 III-3 in Verizon's direct testimony, which is dated
10 July 31st, 2001, so this would be nonmediation
11 testimony. I'm sorry, I don't know the exact
12 number. This is Albert/D'Amico direct testimony
13 dated--

14 MR. D'AMICO: Exhibit 4.

15 MR. GOYAL: Exhibit 4 dated July 31st. At
16 page 27, the witness has testified that Verizon
17 Virginia and Cox have reached mutual agreement. I
18 would like to call your attention to that paragraph
19 at the top of page 27.

20 Has a copy of that agreement or the terms
21 of that agreement, have they been provided to
22 WorldCom and AT&T?